

Application No. 09/929,032
Amendment dated August 24, 2005
Response to Office Action dated March 5, 2005

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A communications network, adapted for use with mobile wireless user terminals, said network comprising:

a packet-switched core network; and

a plurality of access points coupled to said core network, each said access point being adapted to provide any said user terminal with communications access to said core network when said any user terminal becomes affiliated with said access point, and including an address resolution protocol cache which is adapted to store information representative of affiliation between said user terminals and said access points, and each said access point being adapted to update its address resolution protocol cache with an Internet protocol address of a said user terminal when that said user terminal becomes affiliated with said access point, and being further adapted to issue an address resolution protocol request which causes deliver to the other said access points a message indicating to update their respective address resolution protocol cache to indicate that a said user terminal has changed its affiliation from another said access point to said access point, to enable said other access points to update their respective address resolution cache based on said message.

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2. (Currently Amended) A communications network as claimed in claim 1, wherein:
said each access point is adapted to issue said ~~message~~ address resolution protocol
request over said core network ~~as an address resolution request for an address of said user~~
~~terminal which has changed its affiliation thereto.~~

3. (Canceled)

4. (Canceled)

5. (Original) A communications network as claimed in claim 1, wherein:
said access point with which a said user terminal is affiliated is adapted to transmit a
received data packet to said user terminal via a wireless communications link.

6. (Original) A communications network as claimed in claim 1, wherein:
each said access point includes a wireless transceiver, adapted to transmit and receive
data packets to and from a said user terminal affiliated therewith via a wireless communications
link.

7. (Currently Amended) A communications network as claimed in claim 1, wherein:

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all of said access points are within the same broadcast network ~~each said address resolution cache includes an address resolution protocol cache.~~

8. (Currently Amended) A communications network as claimed in claim 1, further comprising:

at least one of a media server, DNS server and an IP gateway router, each including a respective an address resolution protocol cache which is adapted to store information representative of affiliation between said user terminals and said access points and is updateable based on said ~~message~~ address resolution protocol request.

9. (Canceled)

10. (Original) A communications network as claimed in claim 1, wherein:

each said access point is adapted to provide any said user terminal with communications access to said core network when said user terminal is participating in an ad-hoc network.

11. (Currently Amended) An access point, coupled to a communications network and being adapted to provide mobile wireless user terminals with communications access said network, said access point comprising:

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a wireless transceiver, adapted to transmit and receive data packets to and from a said wireless user terminal affiliated with said access point;

an address resolution protocol cache, adapted to store information representative of affiliation between said user terminals and said access points; and

an affiliation indicator, adapted to ~~deliver a message to~~ update the address resolution protocol cache with an Internet protocol address of a said user terminal when that said user terminal becomes affiliated with said access point, and being further adapted to issue an address resolution protocol request which causes other access points coupled to said communications network to update their respective address resolution protocol cache to indicate ~~indicating~~ that a said user terminal has changed its affiliation from said another access point to said access point, ~~to enable said other access points to update their respective address resolution cache based on said message.~~

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Currently Amended) An access point as claimed in claim 11, wherein:

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~~each said address resolution cache includes an address resolution protocol cache~~ all of
said access points are within the same broadcast network.

16. (Original) An access point as claimed in claim 11, wherein:

said wireless transceiver is adapted to transmit and receive data packets to and from a said wireless user terminal affiliated with said access point when said user terminal is participating in an ad-hoc network.

17. (Currently Amended) A method of handling mobility of wireless user terminals adapted for use with a communications network including a packet-switched core network and a plurality of access points coupled to said core network, said method comprising:

provide a said user terminal with communications access to said core network via said access point when said user terminal becomes affiliated with said access point;

storing information representative of affiliation between said user terminals and said access points in a respective address resolution protocol cache of each said access point;

controlling said access point to deliver update its address resolution protocol cache with an Internet protocol address of a said user terminal when that said user terminal becomes affiliated with said access point, and to issue an address resolution protocol request to indicate to the other said access points a message indicating that a said user terminal has changed its affiliation from said another said access point to said access point; and

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updating respective said address resolution protocol caches of the other said access points based on said ~~message~~ address resolution protocol request to indicate said change in affiliation of said user terminal.

18. (Original) A method as claimed in claim 17, wherein:

said controlling step controls said access point to issue said ~~message~~ address resolution protocol request over said core network ~~as an address resolution request for an address of said user terminal which has changed its affiliation thereto.~~

19. (Canceled)

20. (Canceled)

21. (Original) A method as claimed in claim 17, further comprising:

controlling said access point with which a said user terminal is affiliated to transmit a received data packet to said user terminal via a wireless communications link.

22. (Currently Amended) A method as claimed in claim 17, wherein:

~~each~~ all of said ~~address resolution caches includes an address resolution protocol cache~~ access points are within the same broadcast network.

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23. (Currently Amended) A method as claimed in claim 17, further comprising:
updating respective address resolution protocol caches of at least one of a media server,
DNS server and an IP gateway router of said network based on said ~~message~~ address resolution
protocol request.

24. (Canceled)

25. (Original) A method as claimed in claim 17, wherein:
said providing step includes providing said user terminal with communications access to
said core network when said user terminal is participating in an ad-hoc network.

26. (Currently Amended) A method for providing mobile wireless user terminals
with communications access to a packet-switched network, said method comprising:
controlling an access point on said packet-switched network to transmit and receive data
packets to and from a said wireless user terminal affiliated with said access point;
controlling said access point to store information representative of affiliation between
said user terminals and access points on said packet-switched network in an address resolution
cache of said access point;

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controlling said access point to ~~deliver a message~~ update its address resolution protocol cache with an Internet protocol address of a said user terminal when that said user terminal becomes affiliated with said access point, and to issue an address resolution protocol request to indicate to other said access points coupled to said packet-switched network indicating that a said user terminal has changed its affiliation from said another access point to said access point; and

controlling said other access points to update their respective address resolution protocol cache based on said message address resolution protocol request.

27. (Currently Amended) A method as claimed in claim 26, wherein:

said third controlling step controls said access point to issue said message address resolution protocol request over said packet-switched network ~~as an address resolution request for an address of said user terminal which has changed its affiliation thereto.~~

28. (Canceled)

29. (Canceled)

30. (Original) A method as claimed in claim 26, wherein:

~~each said address resolution cache includes an address resolution protocol cache~~ all of said access points are within the same broadcast network.

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31. (Original) A method as claimed in claim 26, wherein:

said first controlling step controls said access point to transmit and receive data packets to and from a said wireless user terminal affiliated with said access point when said user terminal is participating in an ad-hoc network.

32. (Currently Amended) A computer-readable medium of instructions, adapted to control access points of a communications network including a packet-switched core network to handle mobility of wireless user terminals adapted for use with said communications network, said computer-readable medium of instructions comprising:

a first set of instructions, adapted to control a said access point to provide a said user terminal with communications access to said core network via said access point when said user terminal becomes affiliated with said access point;

a second set of instructions, adapted to control each of said access points to store information representative of affiliation between said user terminals and said access points in their respective address resolution cache;

a third set of instructions, adapted to control said access point to update its address resolution protocol cache with an Internet protocol address of a said user terminal when that said user terminal becomes affiliated with said access point, and to issue an address resolution

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protocol request to indicate deliver to the other said access points ~~a message indicating that a said~~
user terminal has changed its affiliation from another said access point to said access point; and
a fourth set of instructions, adapted to update respective said address resolution protocol
caches of the other said access points based on said ~~message~~ address resolution protocol request
to indicate said change in affiliation of said user terminal.

33. (Currently Amended) A computer-readable medium of instructions as claimed in
claim 32, wherein:

said second set of instructions is adapted to control said access point to issue said
~~message~~ address resolution protocol request over said core network ~~as an address resolution~~
~~request for an address of said user terminal which has changed its affiliation thereto.~~

34. (Canceled)

35. (Canceled)

36. (Original) A computer-readable medium of instructions as claimed in claim 32,
further comprising:

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a fifth set of instructions, adapted to control said access point with which a said user terminal is affiliated to transmit a received data packet to said user terminal via a wireless communications link.

37. (Currently Amended) A computer-readable medium of instructions as claimed in claim 32, wherein:

~~each of said address resolution caches includes an address resolution protocol cache~~ all of said access points are within the same broadcast network.

38. (Currently Amended) A computer-readable medium of instructions as claimed in claim 32, further comprising:

a sixth set of instructions, adapted to control at least one of a media server, DNS server and an IP gateway router of said network to update its respective address resolution protocol cache of based on said ~~message~~ address resolution protocol request.

39. (Canceled)

40. (Original) A computer-readable medium of instructions as claimed in claim 32, wherein:

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said first set of instructions is adapted to control said access point to provide said user terminal with communications access to said core network when said user terminal is participating in an ad-hoc network.

41. (Currently Amended) A computer-readable medium of instructions for controlling an access point of a packet-switched network to providing mobile wireless user terminals with communications access to said packet-switched network, said computer-readable medium of instructions comprising:

a first set of instructions, adapted to control a said access point on said packet-switched network to transmit and receive data packets to and from a said wireless user terminal affiliated with said access point;

a second set of instructions, adapted to control said access point to store information representative of affiliation between said user terminals and access points on said packet-switched network in an address resolution protocol cache of said access point;

a third set of instructions, adapted to control said access point to ~~deliver a message~~ update its address resolution protocol cache with an Internet protocol address of a said user terminal when that said user terminal becomes affiliated with said access point, and to issue an address resolution protocol request to indicate to other said access points coupled to said packet-switched network indicating that a said user terminal has changed its affiliation from another access point to said access point; and

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a fourth set of instructions, adapted to control said other access points to update their respective address resolution cache based on said ~~message~~ address resolution protocol request.

42. (Currently Amended) A computer-readable medium of instructions as claimed in claim 41, wherein:

said third set of instructions is adapted to control said access point to issue said ~~message~~ address resolution protocol request over said packet-switched network ~~as an address resolution request for an address of said user terminal which has changed its affiliation thereto.~~

43. (Canceled)

44. (Canceled)

45. (Currently Amended) A computer-readable medium of instructions as claimed in claim 41, wherein:

~~each of said respective address resolution caches includes an address resolution protocol~~
~~cache~~ all of said access points are within the same broadcast network.

46. (Original) A computer-readable medium of instructions as claimed in claim 41, wherein:

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said first set of instructions is adapted to control said access point to provide said user terminal with communications access to said core network when said user terminal is participating in an ad-hoc network.